AMENDMENTS TO THE SPECIFICATION

Please replace the identified paragraphs with the following rewritten paragraphs.

Paragraph beginning at page 3, line 15

Over the last few years, the Charged Particle Physics Branch (Code 6750) at the Naval Research Laboratory has developed a new plasma source called the Large Area Plasma Processing System (LAPPS). See U.S. patents 5,182,496 and 5,874,807 and the following articles for background material. Physics of Plasmas, *5(5),* 2137-2143, **1998**; Plasma Sources Sci. Technol, *9*, 370-386, **2000**; Journal of Vacuum Science and Technology A, *19(4),* 1325-1329, **2001**; Journal of Vacuum Science and Technology A, *19(4),* 1367-1373, **2001**; Physics and Plasma, *8(5),* 2558-2564, **2001**. All patents and articles cited above are incorporated herein by reference in their entireties. This device uses a magnetically confined, sheet electron beam to ionize a background gas and produce a planar plasma. Electron beams exhibit high ionization and dissociation efficiency of the background gas. In addition, the plasma production process is largely independent of the gas constituents and reactor geometry, allowing for both plasma and system optimization. Since the plasma volume is limited only by the beam dimensions, the usable surface area of these plasmas can exceed that of other plasma sources. In our laboratory, rectangular plasmas with a thickness of 1 cm and an area of 60 cm x 60 cm and 1 m^2 have been produced. The electron beam can be generated from a linear hollow cathode, hot filament, or field emitting electron source.

Paragraph beginning at page 4, line 29

EBELADS is similar to LAPPS in concept and is illustrated in Figures 1. and 2. Specifically, EBELADS uses a magnetically confined, sheet electron beam to ionize and dissociate a background gas. The electron beam energy is nominally a few kiloelectron volts (keV), such as 1-5 keV, or less with beam current densities ranging from 1 to 100 mA/cm^2 over the cross-section of the beam. The beam width is variable and can exceed a meter. The thickness is up to a few centimeters and is maintained over the beam length by an axial magnetic field that exceeds 100 Gauss. The length of the plasma sheet is determined by the range of the electron beam, and scales with the beam energy and gas pressure. The range is usually maintained at several times the system length to ensure uniformity in plasma production. The gas pressure typically lies between 10 and 100 mTorr. For the parameters outlined, the beam range is greater than 1 m and the plasma densities are as high as ~ 10^{12} cm^{-3}. Thus, the EBELADS system is capable of producing thin films and coatings over areas up to and exceeding $1m^2$. While the method of plasma production in EBELADS and LAPPS is the same, the EBELADS system is optimized for the production of thin films and coatings and results in a fundamentally different device.

Paragraph beginning at page 5, line 13

Electron beam-produced plasmas are characterized by low electron temperatures, with average energies extending from a few tenths of an eV in molecular gases to about one eV in noble gases, although electron energies up to 1.5 eV have been observed. The plasma potential is approximately five times the electron temperature and so the plasma potential extends up to 5 or 6 volts, depending on the electron temperature. For unbiased surfaces then, incident ions will impact the surface with energies up to the plasma potential(a few eV). For a plasma density of 10^{11} cm^{-3}, the flux of ions at a surface will be on the order of 10^{16} $cm^{-2}s^{-1}$. Furthermore, the plasma density is found to be uniform over the electron beam volume resulting in a uniform flux that is deliverable over areas exceeding a square meter.